tion be changed, then, although the variation might continue to be for a time perpetuated by descent, it would probably become less strongly marked and perhaps ultimately disappear. One could also conceive that the introduction of a new habit or external condition the effect of which would be to produce a variation in a direction different from that which had originally been acquired, would tend to neutralize the influence of descent in the transmission of the older character.

By accepting the theory that somatogenic characters are transmitted we obtain a more ready explanation how men belonging to a race living in one climate or part of the globe can adapt themselves to a climate of a different kind. On the theory of the non-transmissibility of these acquired characters, long periods of years would have to elapse before the process of adaptation could be effected. The weaker examples, on this theory, would have had to have died out, and the racial variety would require to have been produced by the selection of variations arising slowly, and requiring one knows not how many hundreds or thousands of years to produce a race which could adapt itself to its new environment. We know, however, that this process of the dying out of the weakest and the selection of the strongest is not necessary to produce a race which possesses well-recognizable physical characters. For most of us can, I think, distinguish the nationality of a citizen of the United States by his personal appearance, without being under the necessity of waiting to hear his speech and intonation.

It may perhaps be thought that, in selecting the subject of Heredity for my address, and in treating it, as I have to a large extent done, in its general biological aspects, I have infringed upon the province of Section D. But I am not prepared to admit that any such encroachment has been made. Man is a living organism, with a physical structure which discharges a variety of functions, and both structure and functions correspond in many respects, though with characteristic differences, with those which are found in animals. The study of his physical frame cannot therefore be separated from that of other living organisms, and the processes which take place in the one must also be investigated in the other. Hence we require, in the special consideration of the physical framework of Man, to give due weight to those general features of structure and functions which he shares in common with other living organisms. But whatever may have been the origin of his frame, whether by evolution from some animal form or otherwise, we can scarcely expect it ever to attain any greater perfection than it at present possesses.

The physical aspect of the question, although of vast importance and interest, yet by no means covers the whole ground of Man's nature, for in him we recognize the presence of an element beyond and above his animal framework.

Man is also endowed with a spiritual nature. He possesses a conscious responsibility which enables him to control his animal nature, to exercise a discriminating power over his actions, and which places him on a far higher and altogether different platform than that occupied by the beasts which perish. The kind of evolution which we are to hope and strive for in him is the perfecting of this spiritual nature, so that the standard of the whole human race may be elevated and brought into more harmonious relation with that which is holy and divine.

REPORTS.

Report (Second) of the Committee appointed for the purpose of Collecting Information as to the Disappearance of Native Plants from their Local Habitats. Prof. Hillhouse, Secretary.

As intimated at the close of the Report for 1887,[1] the Committee has given its attention in the first instance to Scotland, and appends hereto such portion of the materials placed at its disposal as, for any reason, it considers desirable to publish. It has excluded a considerable number of plants of little interest, and especially such as the records show to be recent introductions, casuals, escapes, &c., the loss of which is only a return, therefore, to an earlier, but still recent, state. There is little doubt that the list, even thus restricted, will be considerably amplified hereafter.

The plants recorded are numbered in accordance with the "London Catalogue," eighth edition, in which the distribution census of each plant will be found. Nearly all of the records are on the authority of some competent botanist resident in the locality, and whose initials, or some distinguishing initials, are appended. As has been pointed out by more than one correspondent, scarce plants occasionally well-nigh disappear in particular seasons, and hence the records of other than frequent visitors are not fully reliable.

The attention of botanists is particularly drawn to the records under the numbers 52, 264, 374, 406, 570, 575, 687, 910, 932, 993, 1018, 1020, 1478, 1695, and 1772, as giving examples of divers ways, often very curious and interesting, in which plants can become extinct.

The attention of the Committee's correspondents has been, in the main, confined to complete or threatened extinction; but in addition to this there is a general consensus of opinion that the rarer and more conspicuous Alpine plants are less abundant than they used to be. Amongst the localities specially mentioned are Clova and Ben Lawers; such plants (in addition to those given in the list) as *Saxifraga cernua*, *Alsine rubella*, *Gentiana nivalis*, &c., are notably less frequent than twenty years ago. Strange rumours have been communicated to the Committee as to the disappearance of plants from accessible habitats within the range of some of the deer "forests," but it is unable to verify these statements. Most of the correspondents agree, however, that the injudicious action of botanists themselves, and of botanical exchange clubs, has been a potent factor in the changes which have taken place. It is too often forgotten that the very rarity of a plant is the sign, and in great degree also the measure, of the acuteness of its struggle for existence, and that when a plant is in a state of unstable equilibrium with its environment, a small disturbance may have disproportionately great effects.

It will be observed that the "dealer" and "collector" figure largely, especially in connection with the disappearance of ferns. Thus one of the correspondents indicates (and offers to name) a dealer who has extirpated, or well-nigh extirpated, a considerable number of species in the district of Dumfries, and whose conduct he had brought under the notice of the local Natural History Society, of which the correspondent is Secretary. "He had also removed and sold almost all of the plants of *Nymphæa alba* from the lochs of this district before discovery; but now, I am happy to say, he is forbidden access to any estate in this district under penalty of prosecution for trespass." The attention of Natural History Societies may well be drawn to this case, as it happily illustrates at the same time one phase of the disease and a cure.

"Summer visitors" do not appear to be directly responsible for much damage, as their wanderings are probably over too restricted an area to produce much effect. There is no doubt, however, that they provide the larger portion of the customers of the "collector," and so are indirectly answerable for his ravages. The temptation to bring home some rare and beautiful fern, like *Aspidium* (*Polystichum*) *Lonchitis*, as a relic of a northern trip, is too great to be resisted, though something may possibly be done by persuading tourists that equally good plants, taken up with all proper care, and at a season when transplanting is not dangerous, can be obtained from any great fern nursery, for a price which is practically lower, often much lower, than that charged upon some Highland railway platform or roadside.

The Committee feels, however, that neither local dealers nor their customers are as a rule amenable to any ordinary appeal or to sentimental considerations, and would suggest therefore that the local Natural History Societies or Field Clubs should keep careful guard over any rare plants to be found within their respective spheres of action, and by appeal to the owner, or in other preferable way, should endeavour to effect their preservation. At the same time, many correspondents draw attention to the insertion by gardening periodicals of the advertisements of collecting dealers, and express the hope that the amount of revenue derived from these advertisements is not so great as to negative the possibility that the gardening journals may be induced, by discontinuing their insertion, to strike a heavy blow at a process which is depriving many districts of our land of one of their chief natural beauties.

39 *Trollius europæus*, L. Extinct in Mid-Aberdeen, &c. (W. W. and J. M.).

52. *Nymphæa alba*, L. Almost extirpated from lochs in the district round Dumfries by a dealer (J. W.). Has disappeared from the district of Birnie, near Elgin, by drainage (G. and T. A.).

---

[1] The Committee was unable to report in 1888, having lapsed by accident.

58. *Meconopsis cambrica*, Vig. Believed to be extirpated from banks of Water of Leith and Currie, Midlothian (G. A. P.).

59. *Glaucium flavum*, Crantz. Recorded in 1776 for seashore at Bay of Nigg, near Aberdeen, but not since 1800 (J. W. H. T.). Found sixty years ago at Montrose Links; not now (R. B.).

184. *Dianthus Armeria*, L. Occurred, though not abundantly, in rough pasture near Glencarse Station, Perthshire; has been entirely destroyed through the cultivation of the ground (F. B. W.). This was one of its most northern stations.

207. *Lychnis viscaria*, L. Blackford Hill, Midlothian; now very rare (G. A. P.). Arthur's Seat, Edinburgh; supposed to be extirpated (G. A. P.),

208. *Lychnis alpina*. Is now becoming rare in its habitats on Clova Mountains (G. A. P.).

263. *Hypericum perforatum*, L. Formerly grew plentifully near Cromarty Nursery, but has ceased to exist, as the ground is now used for agricultural purposes (T. A.). This was one of its most northern stations.

264. *Hypericum quadrangulum*, L. Has wholly disappeared from the vicinity of Fortrose, Ross-shire, having been eaten by cattle or trodden down (T. A.). This was one of its most northern stations.

368. *Lotus pilosus*, Beeke. Extinct round Alford, Mid-Aberdeenshire, from cultivation (W. W.).

374. *Oxytropis uralensis*, D.C. Grew in abundance near Invergordon, Ross-shire, but on one occasion the medical man of the town saw a man digging it up with a trowel, and it is now extinct (T. A.).

375. *Oxytropis campestris*, D.C. Rocks at Bradoony, Clova; now very rare; extirpated from all accessible parts of the rocks (G. A. P.).

406. *Lathyrus niger*, Wimm. Has well-nigh disappeared from its station at Killiecrankie Pass owing to the late guide to the Pass showing it to all tourists. An appeal to the proprietor might save the rest of the specimens, of which very few stations exist (F. B. W.).

501. *Agrimonia Eupatoria*, L. Becoming very scarce in Glen Urquhart, Inverness-shire (Gr.). This was one of its most northern stations.

525. *Pyrus Aria*, Sm. One specimen only (? *P. fennica*, L.) known in Arran; now lost through injury (G. A. P.). Lost also from one or two other stations on the Western Highlands, and now very rare in Scotland.

570. *Sedum reflexum*, L. Found freely on a wall at Birnie, Elgin; disappeared through repairs (G.). Not native.

575. *Drosera anglica*, Huds. Extinct in Kincardine (M.). Extinct round Alford, Mid-Aberdeen, through drainage (W. W.).

577. *Hippuris vulgaris*, L. Extinct round Alford, Mid-Aberdeen, but still appears on the borders of Banffshire.

611. *Eryngium maritimum*, L. Found in the early part of the century on the sandy coast at St Cyrus, near Montrose, and at St. Fergus, Peterhead, but extinct in both localities from unknown causes (J. W. H. T. and R. B.).

687. *Linnæa borealis*, Gronov. Has been cleared from near Dingwall, Ross-shire, owing to the wood in which it grew having been cut down and the ground cultivated (T. A.). Formerly grew at Kingsmills, but has been destroyed through cultivation (G. A., *fide* T. A.). These are two of the most northern British stations.

812. *Silybum Marianum*, Gaertn. Has gone from the rocks near Tarbet-ness Lighthouse, Ross-shire (D.). This plant is very rare in Scotland.

887. *Lactuca* (*Mulgedium*) *alpinum*. This plant was found (probably abnormally) on the Coreen Hills at about 700 feet, but is now extinct (W. W.).

910. *Vaccinium Oxycoccos*, L. Formerly grew in a piece of mossy land on the uplands north of Mealfourvouny, a hill of Old Red Sandstone conglomerate above 3000 feet, but whether the plants were of recent introduction or last survivors, they have disappeared (Gr.).

926. *Phyllodoce taxifolia*, Salisb. (*Menziesia cærulea*). The only British habitat of this plant is the Sow of Athol, and it has now been nearly extirpated, for sale (K. and F. B. W.). The habitat is within sight of a gamekeeper's house, so that its protection would be easy if the Duke of Athol, the owner, could be moved to that effect.

929. *Pyrola media*, Sw. Has disappeared from White Hills, Colvend, Kirkcudbrightshire, through sheep grazing (J. M. A.).

932. *Moneses grandiflora*, Salisb. (*Pyrola uniflora*, L.). Extirpated from Woodhead Hill, Traqueer, Dumfriesshire (J. W.). Once not uncommon on the Muirhead of Scone; now very rare, from extirpation by botanists and others (F. B. W.). Formerly abundant within 4 miles of Forres; now extirpated; also from the wood at Brodie, near Forres, from the wood being cut down, and from Coul Woods, near Strathpeffer. It is also disappearing from Rothiemurchen, in this case from the rapacity of collectors (K.).

945. *Primula scotica*, Hook. Marsh near Edinburgh, Pentland Hills; practically extirpated (G. A. P.).

984. *Asperugo procumbens*, L. Has not been found for some years near the village of Balnahuish, on the Dornoch Firth (D.). This was its most northern station.

993. *Mertensia maritima*, Don. Shingle at Bay of Nigg, Aberdeen; almost extirpated from shingle being removed to form concrete blocks used in building a pier some years ago (J. W. H. T.).

1006. *Echium vulgare*, L. Nearly extinct, through cultivation, in the Black Isle, between Inverness and Fortrose, Ross-shire (T. A.).

1018. *Atropa Belladonna*, L. Has disappeared from Renlop Abbey, near Birnie, by extraction, on account of the accidents it had caused (G.). Has not been seen for some years at the Old Kutt, near Ganlude (T. A.). This eliminates two of the few Scottish stations.

1020. *Hyoscyamus niger*, L. Appeared in two or three places in the neighbourhood of Avoch, a fishing village on the Moray Firth, but disappeared in a few years. Informant "thinks it would come up again if the ground were deeply trenched. Some years ago an old elm was blown down and the root blasted, and for two succeeding summers *H. niger* grew luxuriantly in the hole caused by the tearing up of the root of the tree" (S. R., *fide* T. A.).

1092. *Utricularia vulgaris*, and 1094, *U. minor*, L. Extinct in Central Aberdeen (J. M. and W. W.).

1161. *Ajuga pyramidalis*. Has disappeared from In. Achilty, Dingwall, Ross-shire (T. A.).

1424. *Paris quadrifolia*, L. There is one station near the town of Inverness; nearly extinct, through the publicity of its habitat, this being one of the chief resorts of the population (T. A.). This is one of its most northern stations.

1431. *Juncus balticus*, Willd. Loch of Park, and Links north of Aberdeen; never plentiful, and not seen for some years. Cause of disappearance doubtful (J. W. H. T.).

1457. *Sparganium ramosum*, Curtis; *S. simplex*, Huds.; *S. affine*, Sch.; and *S. minimum*, Fr. All apparently extinct in Mid-Aberdeen (W. W.).

1478. *Scheuchzeria palustris*, L. The only Scottish station for this plant, a marsh near Methven (known botanically as "Methven bog"), has been lost; perhaps from the outlet becoming blocked, so that more water collected than the plant could stand, but more probably from the settlement there of a large colony of about 3000 black-headed gulls, the result being the destruction of all but the rankest vegetation (chiefly *Carex ampullacea*). Very careful searching during the last three years has failed to show a trace of the plant (F. B. W.).

1590. *Carex limosa*, L. Has disappeared from Maxwell-town Loch, Kirkcudbrightshire, through drainage (J. M. A.).

1695. *Melica uniflora*, Retz. Is not now found by the side of the burn at Golspie, Sutherland, probably from the hollow, caused by the upturned stool of a large tree which has been blown over, draining the spot where it grew (J.). This was its most northern Scottish station.

1766. *Cryptogramme crispa*, R. Br. (Parsley fern). Extirpated from several localities in the vicinity of Dumfries (J. W.). Abundant thirty years ago on an ancient hill-fortress near Brechin; now extirpated by traders (R. B.).

1772. *Asplenium viride*, Huds. Nearly extinct in district of Black Isle, between Inverness and Fortrose, through drainage and cultivation (T. A.). Has been extirpated from its old habitats in Glen Urquhart, Inverness-shire, by an itinerant fern-collector who squatted in the neighbourhood and took all he could find; but new habitats have been discovered (Gr.).

1773. *Asplenium Trichomanes*, L. Not now found in the woods of Knockespock Clatt, Mid-Aberdeen (W. W.).

1776. *Asplenium germanicum*, Weiss. Nearly eradicated from Stenton Rock, near Dunkeld (F. B. W.).

1777. *Asplenium septentrionale*, Hull. Probably extirpated, or nearly so, from Arthur's Seat, Edinburgh (G. A. P.). Nearly eradicated from Stenton Rock, near Dunkeld (F. B. W.).

1779. *Athyrium alpestre,* Milde. Now very rare in Clova Mountains, and mostly in accessible places (G. A. P.).

1781. *Ceterach officinarum,* Desv. Almost extirpated from Orchard-town Tower, Kirkcudbrightshire, by fern hunters (J. M. A.). Used to grow on the walls of Drumlanrig Castle, one of the seats of the Duke of Buccleuch, Dumfriesshire, but not now found there (T. A.).

1782. *Scolopendrium vulgare,* Symons. Almost extirpated from several places in Kirkcudbrightshire by fern-hunters (J. M. A.). Extirpated from several places in the vicinity of Dumfries (J. W.) On the burns falling into Loch Ness there is now only one in which this plant is to be found, owing to the ravages of the itinerant fern-collector referred to under 1772. It still exists, however, in inaccessible stations (Gr.).

1783. *Woodsia ilvensis,* R. Br. Well-nigh extirpated by fern-hunters from the Moffat district (J. W.).

1787. *Cystopteris montana.* This plant, though not at present really uncommon round Aberfeldy, will not improbably be made very scarce by fern-collectors. It has disappeared altogether from one of the stations in which it was first found in Britain (F. B. W.).

1788. *Polystichum Lonchitis,* Roth. Almost extinct on Meal-fourvouny Mountain, Inverness-shire, through the action of fern-collectors, and especially of the one referred to under 1772 and 1782 (Gr.). Has been cleared from the Raven's Rock, near Strathpeffer, Dingwall, Ross-shire, by summer visitors (T. A.). Was plentiful near Castleton, Braemar, formerly, but the guides learned that they could sell it at a shilling a plant, and it is now difficult to get (T. A.).

1803. *Phegopteris* (*Polypodium*) *Robertiana,* A. Br. ; *Polypodium calcareum,* Sm. Once abundant in the *débris* of an old limestone quarry near Aberfeldy, but now nearly eradicated. Fern-hunting visitors and tourists are largely to blame for this, but the destruction has been completed by persons who collect ferns for sale. That the species is not altogether lost in the district is, however, shown by the fact that a few weeks ago a local fern-hunter was offering plants for sale, and at the same time plants of 1787, *Cystopteris montana* (F. B. W., July, 1887).

1806. *Osmunda regalis,* L. Has disappeared from Ballingear Glen, New Galloway, and from other places, as Colvend, through the ravages of fern-hunters (J. M. A.). Extirpated from several localities in the vicinity of Dumfries (J. W.). Has entirely disappeared from Loch of Park, and nearly from the cliffs south of Aberdeen, in both of which localities it was formerly plentiful. Fern-collectors are mainly responsible (J. W. H. T.).

1809. *Botrychium Lunaria,* Sw. Formerly very local in the Pentlands ; now extirpated (G. A. P.).

1818. *Equisetum hyemale,* L. Extinct in Mid-Aberdeen (J. M.).

Report of the Committee appointed for the purpose of co-operating with the Scottish Meteorological Society in making Meteorological Observations on Ben Nevis. Mr. Buchan, Secretary.

The work of carrying on the observations hourly, by night as well as day, has been carried on by Mr. Omond and his assistants during the year with the same enthusiasm and unbroken continuity as in time past ; and the five daily observations in connection with the Ben Nevis Observatory have been made at Fort William by Mr. Livingston with the greatest regularity and care.

As in the previous year, the state of the health of the observers, occasioned by their continuous residence at the top of the mountain, where exercise in the open air is practically impossible during the greater part of the year, rendered it again necessary to give them relief during the winter and spring. The services of Mr. Drysdale were again secured for six months ; Mr. R. C. Mossman, the Society's observer for Edinburgh, gave his services as observer for six weeks in April and May ; and Mr. McDonald, Edinburgh, has given a month's service as observer in July and August of this year. Messrs. Omond and Rankin, during the time they were relieved from the work of the Observatory, took part in the work of the office of the Scottish Meteorological Society, and gave material assistance, more particularly in the reduction, preparation for press, and discussion of the Ben Nevis observations.

The photographing of clouds and other meteorological phenomena has been actively prosecuted at the Observatory, and results of considerable interest and importance have been already obtained. Selections from the photographs were exhibited by the Scottish Meteorological Society and by the Royal Meteorological Society during the winter session. Of these photographs four are submitted with this Report—viz. (1) a photograph of St. Elmo's fire ; (2) a cloud photographed at midnight of June last year ; (3) a remarkably fine photograph of a cloud, partly made up of flattened masses, which is occasionally formed in mountainous districts ; and (4) photographs of crystals on the Observatory and instruments outside.

Mr. Rankin has extended and amplified his investigation of the cases of St. Elmo's fire recorded at the Observatory ; and the results, which are interesting and suggestive, have been published in the Journ. Scot. Meteor. Soc.

Mr. Omond has entered on an investigation of the relations of the wind direction on the top of Ben Nevis to the sea-level isobaric of the district at the time, and to the storms advancing on the Atlantic towards North-Western Europe, as shown on the daily weather charts of the northern hemisphere published by the Meteorological Institutes of Germany and Denmark.

This is properly only the commencement of a large discussion of the Ben Nevis observations in some of their more practical aspects, which will be undertaken and pushed forward next year on the plan referred to in last year's Report, as rapidly as the means at the disposal of the Directors of the Observatory will admit.

This season (1889) the snow disappeared from the summit of the mountain in the middle of May, being about a month earlier than in any previous year, and seven weeks earlier than in 1885 ; and during the month of June the spring near the Observatory, and about 60 feet lower down, frequently ran dry, so that for some time water had to be carried on horseback a distance of two and a half miles.

The Directors have had under consideration a proposed systematic observation of the numbers of dust particles in the atmosphere with the instrument recently invented by Mr. John Aitken, and they are of opinion that the Ben Nevis Observatory is the best place for making the observations in the most satisfactory manner. Mr. Aitken will himself superintend the construction of the two instruments which are required, and will see to the placing of the stationary one in the Observatory, and its connections with the atmosphere outside, in suitable positions, and give directions as to the portable one designed as a check instrument, and for observations made at various distances from the Observatory. Application has been made for a grant from the Government Research Fund to aid in carrying on this novel and important research.

Mr. Aitken recently visited the Observatory, and ten observations of the numbers of dust particles on the top of the mountain were made by Mr. Omond and himself, with the results that the numbers per cubic centimetre rose from 350 at noon to 500 at 3 p.m. This result of the first observation is interesting and suggestive. The purest air previously obtained by Mr. Aitken anywhere was on the Ayrshire coast, and on that occasion the numbers were 1260 per cubic centimetre. It may be also observed that the numbers on Ben Nevis rose from noon to 3 p.m., the observations being made at the time of the day when aërial currents from lower levels ascend along the heated sides of the mountain to the Observatory.

In January last the Directors accepted an offer from the Meteorological Council that, on being satisfied that provision had been made for the maintenance of a Low Level Observatory at Fort William, they would supply and erect in the Observatory the self-registering instruments and otherwise complete the ordinary outfit of meteorological instruments, and make an annual grant of £250 towards its maintenance, and also continue the grant of £100 yearly under the present arrangement.

Since last Report, the Directors have received a legacy of £500 bequeathed to the Observatory, by the late Mr. R. M. Smith, who was one of the Directors ; and a grant of £1000 from the Association of the Edinburgh International Exhibition of 1886 from the Surplus Fund of the Exhibition. A suitable site for the Low Level Observatory was procured in Fort William, and plans of the buildings were prepared by their architects, Messrs. Sydney Mitchell and Wilson, which were submitted to the Directors and the Meteorological Council, and approved of. The building is now well advanced, and it is expected that the Observatory will be opened towards the end of the autumn.

The Directors of the Observatory and your Committee in their successive Reports from 1884 insisted on the absolute necessity of combining the double observation for all forecasting purposes, and inquiries in connection therewith; in other words, of combining with the observation at the top of Ben Nevis that made at the same instant near sea-level at Fort William. With the opening of the Low Level Observatory in November will commence a new era in the work of the Ben Nevis Observatory. It will then be possible, by the double set of horizontal meteorological gradients and vertical meteorological gradients thus obtainable, to examine more fully and rigorously the atmospheric changes which precede, accompany, and follow the passage across these islands of the cyclones and anticyclones of North-Western Europe.

The minimum temperature on Ben Nevis for the year was 7 ·2, being the lowest yet observed since the Observatory was opened in 1883. The maximum was 61°·1 in June, which closely agrees with the maxima of previous years, except that of 1887, which rose to 67°·0. It is also to be noted that so late as September temperature rose to 57°·6.

The registrations of the sunshine recorder showed 970 hours of sunshine during the year, the smallest number of hours for any month being 8 for November, and the largest 250 in June, being nearly half the possible sunshine. The number of hours for the four years now observed, beginning with 1885, were 680, 576, 898, and 970. The contrast of the sunshine of 1886 with that of 1888 is thus very striking.

The amount of rainfall for the year was 132·46 inches, the month of least rainfall, 3·76 inches, being June, and of greatest, 20·60 inches, being November. The number of days on which precipitation was *nil*, or less than the hundredth of an inch, was 118. The number of rainless days for the last three years have been 159, 128, and 118. From all the observations yet made, it is seen that a fall, equalling at least 1·00 a day, has occurred on an average of one day in nine.

Atmospheric pressure was this year again above the annual average, the mean at sea-level being 29·889, or 0·055 higher. The lowest mean at the Observatory, 25·035 inches, occurred in March, and the highest, 25·590 inches, in September; the difference being 0·555 inch. At sea-level at Fort William the extreme monthly means were 29·636 inches in November, and 30·132 in September; the difference being 0·496 inch.

NOTES.

MR. GRIESBACH, of the Geological Survey of India, shortly proceeds to Beluchistan to exploit for coal; and Mr. Oldham, also of the Geological Survey, is also going to Beluchistan to investigate and report upon oil fields which are believed to exist there.

THE Iron and Steel Institute has assembled this year in Paris at the rooms of the National Industry Encouragement Society, and its first sitting was held on the 24th inst., under the presidency of Sir J. Kitson. The paper which attracted most attention on the first day was one by M. Schneider, of Creuzot, and M. Hersent, ex-President of the French Civil Engineers' Society, on the Channel Bridge, which gave an elaborate account of the scheme. The route chosen as the line, stretching over the shallowest parts of the Channel and connecting the shores where closest to each other, commences at a point near Cape Gris Nez, passes over the Colbart and Varne banks, and terminates near Folkestone. The Colbart and Varne banks are situated near the centre of the Channel, about 6 kilometres apart, the depth of the water at that point not exceeding 7 or 8 metres at low water, and they are separated from each other by a depression about 25 to 27 metres deep. Between the Varne and the British coast the depth does not exceed 29 metres, but near Colbart the bottom sinks somewhat abruptly down to 40 metres. It then attains 55 metres about midway across, when it begins gradually to rise. In these parts the chief difficulties would be encountered in laying the foundations. The result of repeated experiments is that the ground is found to be sufficiently solid to support very extensive works, and the borings lately made in connection with the proposed tunnel have confirmed preceding experiments as to the position and nature of the bottom as published by M. de Gamond. The metal proposed to be used is steel. The amount of metal and machinery to be provided would represent an aggregate weight of about 1,000,000 tons. The spans of metal would be 500 metres in length across the Channel, supported on columns resting at different depths on the bottom of the sea. A rough calculation gives 380,000,000 francs for masonry supports, and 480,000,000 francs for the metallic superstructure—in all, 860,000,000 francs, or £34,400,000. The time required for the undertaking was fixed at about ten years.

THE eleventh Congress of the Sanitary Institute was opened at Worcester on the 24th inst. In connection with the Congress an exhibition of sanitary appliances and apparatus is being held at the Skating Rink, where also lectures on cookery are given by Dr. Strange. The Presidential address was delivered by Mr. G. W. Hastings, M.P., and referred mainly to recent legislation affecting sanitary science.

THE International Oriental Congress, which was held this year during the first and second weeks of the present month, in Stockholm and Christiania, was well attended, and was especially noticeable for the enlightened and warm interest taken in the proceedings by the King. Representatives of Oriental learning from the chief countries were His Majesty's personal guests, the members of the Congress present were on several occasions specially entertained by him, and in other marked ways the King showed his desire to honour science and learning in the persons of the assembled Oriental scholars. The *Times* is the only one of the English daily papers in which the proceedings have been followed regularly, and in the last letter on the subject, its Correspondent, who has been far from a prophet of smooth things in reference to all the proceedings, says that "this eighth International Oriental Congress was favoured above all its predecessors by the right royal splendour with which the ruler of the two countries entertained his guests, by the warm interest which the citizens took in the foreign *savants*, by the care and kindly forethought with which all the arrangements for our comfort had been planned and were carried out, and last (not least) by the grand and lovely natural features of the places which the members visited. Perhaps at future Congresses care will be taken that there be less of empty Oriental parade, by which no palpable literary object can be gained, and that greater facilities be given for placing without delay within the reach of members an abstract of the proceedings in each Section. However, in the face of such boundless hospitality and such personal sacrifices on the part of our hosts, it would be ungracious were we to take exception to what are after all but small matters of detail."

A LARGE number of papers of great philological and general interest were read, as will be readily gathered from the following list of the Sections, with their respective Presidents and Vice-Presidents:—Section I. Modern Semitic: Presidents—Baron Kremer, of Vienna; M. Schefer, of Paris; M. de Goeje, of Leyden. Section II. Ancient Semitic: President—M. Fehr, of Stockholm; Vice-Presidents—M. Chivolson, of St. Petersburg; M. Oppert, of Paris. Section III.: Presidents—M. Max Müller, of Oxford; M. Weber, of Berlin; M. Spiegel, of Erlangen. Section IV.: President—Brugsch Pasha; Vice-Presidents—M. Lieblein, M. Reinisch. Section V.: President—M. Schlegel, of Leyden; Vice-President—M. Cordier, of Paris. Section VI.: President—M. Kern, of Leyden; Vice-President: Mr. R. N. Cust, of London.

A CORRESPONDENT sends us the following instance of "Science as she is wrote," which he thinks worth preserving. It is extracted from an eloquent description of the icebergs near the coast of Newfoundland, which appeared in the *Daily Telegraph* of September 17, and was signed "Edwin Arnold":—"The